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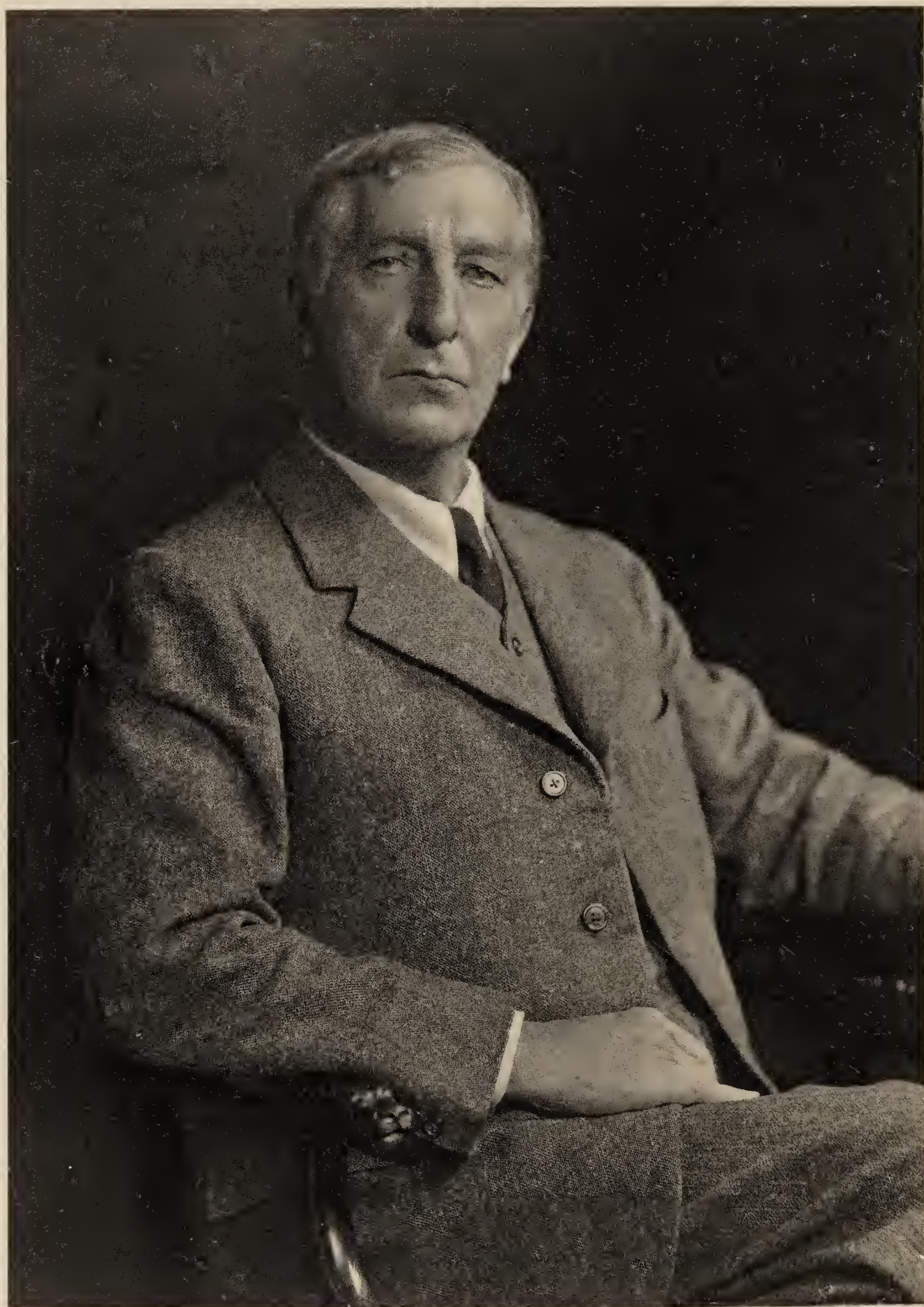
WILLIAM McDOUGALL

1871—1938



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Sam McToughall

WILLIAM McDOUGALL

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WILLIAM McDOUGALL, son of Isaac Shimwell McDougall, a manufacturing chemist of Higher Broughton, and his wife Rebekah *née* Smalley, was born at Chadderton, Lancs, on 22 June 1871, and died November, 1938. McDougall described his father as a typical dark Highlander and his mother as of pure Saxon type. He represented, he said, "that blend of the Mediterranean and Nordic races which has produced the English people". He was sent at the early age of five to a private school and at fourteen to Weimar where he attended a *Real-Gymnasium* for a year. From the age of fifteen he attended for four years courses in the University of Manchester; he graduated with first class honours and specialized in geology in his last year. He came up to St John's College, Cambridge, in May 1890, was admitted Scholar on 21 June 1892 and Fellow 9 November 1897. He was placed in the first class in both parts of the Natural Sciences Tripos, taking Physiology and Human Anatomy with Physiology in Part II. He graduated B.A. in 1894, M.B., B.Chir., and M.A. in 1897.

Few lads have had a more intensive training in the biological sciences, but in later years he regretted that his education had not included more mathematics and that he had not acquired a first-hand knowledge of classical Greek and Latin authors.

While holding a house appointment at St Thomas' Hospital, he was invited to join the Cambridge Anthropological Expedition to the Torres Straits. He sailed in 1899, but left the original party on an invitation from Dr Charles Hose, administrator of a region in Borneo, to collaborate with him on the spot in a study of the head-hunting tribes.

On his return to Cambridge, McDougall was first inclined to make field anthropology his life work, but eventually decided to return to his "original scheme of direct attack on the secrets of human nature". He attended the lectures of Henry Sidgwick and James Ward and, on Ward's advice, went to work under G. E. Müller at Göttingen. He had just married Anne Hickmore, and with his wife spent "a delightful year in quaint, quiet Göttingen". In Müller's well-equipped laboratory he did intensive work on colour vision, a subject his interest in which had first been excited by Rivers who had come up to Cambridge as lecturer on special sense physiology in McDougall's last undergraduate year.

On McDougall's return to England in 1900, he accepted a post in Sully's department at University College. The duties were light and the College equipment scanty. McDougall, who had sufficient private means, took a house at Haslemere, made a laboratory out of two attic rooms and during four years, carried out here what he regarded as the most enjoyable and profitable of his experimental researches, mostly on vision.

It was out of informal gatherings in this London period that the British Psychological Society grew. McDougall joined many societies and read papers before some; but in his opinion the unorthodoxy of his views led to his papers being ignored; he thought he was on the wrong track, and in 1904 applied for and was appointed to the Wilde Readership in Mental Philosophy at Oxford.

It was in the London and Oxford period that McDougall carried out the researches which led to his election in 1912 into this Society. In border-line subjects obviously one cannot make sharp divisions; there is no dividing line between sense physiology and the psychology of special senses; but it would be correct to say that McDougall's earlier work was physiological rather than psychological, while, after 1912, although he never lost interest in sense physiology, he was more psychologist than physiologist. In the autobiography which he contributed to the first volume of *A History of Psychology in Autobiography* published in 1930—

from which some sentences have already been quoted—McDougall accused himself of intellectual arrogance and an invariable tendency to rebel against dominance and support scientifically unpopular doctrines. It is, perhaps, difficult for a precocious mind, as McDougall's clearly was, to escape this tendency. He had had no opportunity of finding his level as a boy in a great Public School; he came up to Cambridge already a university graduate, and as a young man did not come into contact either with large classes or with coevals of his own intellectual rank. At Oxford, although memory probably exaggerated his loneliness, he was, statistically speaking, in a small minority. "I was neither fish, flesh, nor fowl. I was neither a scientist nor a philosopher *pur sang*." It is possible that in some of his later work the emotional tendencies of which he speaks harmed his scientific efficiency. Perhaps the scientific investigator sometimes mistook himself for the prophet in a generation of vipers. But in youth these qualities sustained him; it needed some 'arrogance' for a young Englishman to devote himself to special sense physiology in two attic rooms in Haslemere or even in a set of rooms in the department of physiology at Oxford. To anybody who was young thirty or forty years ago, the mere names of Hering and, still more, Helmholtz are thrilling. The great Helmholtz died in the year McDougall graduated at Cambridge, but he had left first-rate pupils in many of the universities of Germany. Ewald Hering was still active. In sense physiology Germany was first; the rest, it seemed, nowhere. Rivers, full of enthusiasm for Hering's work, had come to Cambridge while McDougall was still a student. He planted a seed in McDougall's mind. It was not, however, until the London, or Haslemere, period that its fruits were gathered; the series of papers on colour vision and on retinal stimulation contributed to *Mind* and to early numbers of the *British Journal of Psychology*.

The chief reason for heated controversy over theories of colour vision between the Helmholtz and Hering schools was a matter of temperament or training. McDougall himself spoke of Helmholtz as a physicist and more than hinted that he was not a

physiologist at all. Historically the charge was almost grotesquely unjust.

Helmholtz's early training and early professional experience were wholly biological; he became a great mathematical physicist by dint of self-education and sheer genius. But it is true that in generalizing the theory of Thomas Young, Helmholtz emphasized its quantitative implications (see for instance pp. 341 *et seq.* of the 2nd edition of *Handb. d. Physiologischen Optik*). What seemed to him of primary importance was the possibility of representing by linear functions of three independent variables the quantitative relations of stimuli operative in 'normal' colour vision, and by means of linear functions of two independent variables the stimuli operative in the common forms of defective colour vision. He was not deeply interested in searching out the physiological mechanisms which were behind such relations. He made physiological suggestions tentatively and a little coldly (*op. cit.* pp. 349–50).

Again, Helmholtz was less at home in the discussion of such problems as those of simultaneous and successive contrast than in the quantitative study of trichromatic and dichromatic systems; his colour vision work appealed more strongly to physicists, like Abney, than to pure physiologists who, in those days, had no passion for equations.

Hering, on the other hand, altogether inferior to Helmholtz in the handling of a quantitative problem, was a born physiologist, with something of Goethe's insight into border-land problems (it is sometimes forgotten how close an analogy there is between parts of Goethe's *Farbenlehre* and Hering's later doctrines), and a good deal of Goethe's distrust of purely quantitative reasoning. McDougall was thrilled by Hering's successful onslaught upon Helmholtz's now admittedly incorrect interpretation of simultaneous contrast and by his ingenuity and versatility in experimental technique. But the effect was, not to enlist McDougall under Hering's banner, but to stimulate him to exclude Helmholtz completely from the Young-Helmholtz combine and to direct against Hering himself experimental

missiles very similar to those which had pierced the armour of Helmholtz.

This particular controversy has lost much of its savour in thirty-five years, and it is possible that McDougall's papers on the measurement of the reaction time of a retinal stimulus and upon peripheral retinal stimulation, printed in the first volume of the *British Journal of Psychology*, would be of more interest, historically, to a young physiologist in 1939.

In his paper on the variation of the intensity of visual sensation with the duration of the stimulus, McDougall, who had tilted against the mighty Ewald Hering on the field of colour vision, roundly asserted that a method of measurement devised by Helmholtz himself was quite unsound.

The method of Helmholtz was this. One presents to the eye first a white semicircle on a black ground, then a wholly white field of equal brightness—these two presentations for precisely measureable periods—finally a black field. The argument is this. If the duration of the first stimulus has reached its maximum, but not that of the second stimulus, there will be a positive after-image of the semicircle; if both have passed their maxima, the former will have reached a lower intensity than the latter, so the semicircle will produce a negative after-image. Between these points there will be a moment at which the semicircle will be visible neither as a positive nor a negative after-image. At that moment the first stimulus must have passed its maximum, the second not have reached it. The interval between the beginning of the second stimulus and this moment of extinction is taken to be the measure of the time required by light of the given intensity to produce its full effects.

McDougall objected that the method was physiologically unsound because the simultaneous presentation side by side of two fields led to reciprocal modification by contrast, and psychologically unsound because the notion that two impressions must be simultaneously present in consciousness during the act of comparison and must be weighed against each other like two weights in opposite scales of a balance, was erroneous.

He accordingly devised a very simple method, the essence of which was to present to the eye light sectors of varying angular width carried in a rotating disc, and to determine the quantitative relations which produced effects of equal brightness. With this simple apparatus he carried out a large number of experiments both with achromatic and chromatic stimuli and on direct and indirect vision. No doubt the precision of the measurements was not great, and there is a certain optimism with respect to extrapolation of results beyond the range of observation. There is, however, a directness and freshness in the method of approach, a simplicity—in the best sense of the term—which is impressive.

The same feeling is inspired by his papers on peripheral vision. Nowadays, when knowledge of the different physiological mechanisms of rod and cone vision is general and the practical applications—for instance, in traffic problems of air, earth, and sea—of great importance, the work of a generation ago seems unnecessarily complicated. But, if comparison is made between what McDougall, a young man working with few mechanical aids and hardly any collaborators, and v. Kries, the head of an institute and a man of immense experience, achieved, one is led to form a high opinion of McDougall's intellectual power. One who felt the fascination of this kind of work in youth may even regret that McDougall was never to become an English v. Kries. His interests gradually became more purely psychological.

The outbreak of the War brought to an end this fruitful period. After a vivid experience as a private in the French Army driving an ambulance, McDougall was absorbed into the R.A.M.C. and put in charge of nervous patients. "I was put in a position where I could select from this vast stream whatever cases seemed most susceptible to treatment. And soon I was head of a hospital section full of 'shell-shock' cases, a most strange, wonderful, and pitiful collection of nervously disordered soldiers, mostly purely functional. One had little time to think out the many theoretical problems. . . . It was a wonderful experience for a psychologist; and besides, for the first time in my life,

except for my short period as house-physician at St Thomas' Hospital, I was giving my whole time and energy to work that was indisputably worth while." One sees in these lines, written twelve years after the War, how low in the scale of human values McDougall came to rate purely intellectual interests. At this period one of us (M.G.) saw a good deal of him at the meetings of the Scientific Advisory Committee appointed by the Liquor Control Board. Among its members was at least one who might be classified as a cheery extrovert, a scientist of the old school who, in the desultory discussions which the lay chairman took a half-conscious delight in provoking, had the power (of which he was blissfully unconscious) of making McDougall white with suppressed fury.

McDougall's intellectual range was so wide that probably no individual could pronounce judgment on the whole of his work. One of us (M.S.) will speak of his position as a psychologist from the point of view of a teacher and investigator in that branch of science. The other (M.G.) more interested in the work of his earlier days can only speak of his professedly psychological work from the standpoint of the amateur.

Putting oneself back into the atmosphere of the time when McDougall was a sense physiologist, it seems that, although his name is not connected with any epoch-making discovery, his researches were characterized by a power of concentrating on essentials and using to the best advantage simple methods, which, in all branches of science, is the mark of superior ability. One derives the impression that, had he continued in this line, his rank as a physiologist would have been high. It may well be that precisely those readers who, whether by temperament or training, are most favourably impressed by the earlier work, will read some of the books which made him famous with a certain sense of disillusion. Although at his best McDougall could write eloquently, he had not the literary gift of William James, and the scientific reader is apt to find his writings diffuse.

It is interesting and perhaps significant that although McDougall in his Oxford days was fully alive to the importance of quanti-

tative methods and impressed upon his pupils the desirability of acquiring what was then a new statistical technique, he himself never used that technique. The lively controversies of five and twenty years ago on coefficients of correlation and the more recent and not less lively controversies on hierarchies, tetrad differences and matrix algebra in the service of the psychologist, left him cold, and in papers on Lamarckian transmission—a research he thought might “rank as by far my most important contribution to science”—the statistical treatment is decidedly old-fashioned.

One of us (M.S.) who was his pupil in the Oxford period has the following recollection of his methods as a teacher.

In the academic sense of the word McDougall had no pupils. Psychology as he understood it did not form part of any official course. His readership demanded only about one lecture a week during university terms, and these lectures were open. Any undergraduate who attended did so on his own initiative, and Cyril Burt has described how his tutor implied, when he suggested attendance at McDougall's lectures, that he would be better employed on the river. The few students who studied psychology did so because they wanted to do so, and not for examination purposes, and in the Physiological Laboratory, where the then Professor of Physiology, Francis Gotch, assigned a few rooms to psychology, they had the advantage of individual tuition and unstinting help and interest.

Characteristically, McDougall's teaching methods were unorthodox. The laboratory tuition took no stereotyped course and no two students began at the same place or pursued the same path. Where one began depended entirely on McDougall's research interest at the time; the beginner acted as subject, for McDougall held the view that the best way to learn to be a researcher was to act as subject to an already experienced researcher.

This did not mean, though, that other aspects were neglected; in time wherever one began one covered eventually the then known field. Nor was the student expected to be passive;

criticisms expressive of some particular interest or difficulty were welcome, and however ignorant or trivial the criticism might be it was always seriously entertained and discussed.

McDougall was an enthusiastic supporter of the experimental method, and recognized that measurement was going to be more and more important; but the attractiveness of the means, he emphasized, must not blind us to the ends. A very striking element in his teaching was his insight into the relationship of a particular experiment to a more remote or fundamental problem. No experiment, however limited, was an end in itself. In his earlier years he believed that the secrets of human nature were to be reached through a study of cerebral processes on the one hand, and psychological processes on the other. This thread runs through the whole of his scientific work. At times he delighted to pursue airy hypotheses to their furthest limits just to see what the possible final result would look like. His limits went very far, leading to subtle problems of time, the nature of reality, and the cosmic implication of the specific energy of the sensory nerves.

In 1898 he published in *Mind* his first purely psychological contribution, in three papers, called *An improvement in Psychological Method*. He criticizes contemporary psychology for its reluctance to acknowledge the importance of the part played in the mind by nerve processes that have no immediate conscious correlate, and for its preoccupation with speculations about the nature of consciousness instead of attacking the more immediate problem of "When and under what conditions does it occur?"

A study of the various forms of consciousness led him to the conclusion that "consciousness varies neither with the complexity, nor the intensity, nor the purposefulness, nor the anatomical seat of neural process in conjunction with which it occurs", but with "the novelty of the combination of neural processes involved". Consciousness would be "impossible if an animal were perfectly adapted to its environment", or "if it lived so long that all parts of the nervous system had become mapped out into well-organized paths of automatic reaction".

"The highest animal is one whose nervous system affords the

greatest possibilities of new adaptations, of new relations among nerve tracts, and so of the most complex and intense consciousness." His evidence involved consideration of the nervous system, the phenomena accompanying drugs and fatigue, the complex character of even the simplest perceptual process, the neural and psychical processes concerned in habit, the nature of physical pain, possibility of telepathy, reflex and instinctive activity, sub-conscious and unconscious processes. These papers foreshadow much of his research work for the next thirty years. The following years up to 1914 saw the production of a series of books. *Physiological Psychology* (1905) was written under the influence of Sherrington, and is a clear exposition of the physiological basis of psychology rather less speculative in subject matter than his first articles.

In 1908 he published what proved to be a psychological best seller—now in its twenty-third edition—namely, *Social Psychology*, as it is almost invariably called, but which he himself called *An Introduction to Social Psychology*. In this he put in the foreground the problem of motivation, and attempted to undermine the force of the current mechanistic and hedonistic interpretations of human behaviour. This work filled a felt need both in the educational and social sciences, and within a few years its main tenets and point of view had been, for practical purposes, accepted. This result was not surprising since it expounded an hypothesis that opened up vistas and revitalized the apparently dry bones of much educational theory. He used, however, to complain that it had never received really informed criticism.

In 1911 he took the relationship of *Body and Mind* as his thesis and aimed at "providing a critical survey of modern opinions and discussions upon the psycho-physical problem". He held the view that "any answer to these problems must have some bearing upon the fundamental doctrines of religion and upon our estimate of Man's position and destiny in the world", and sought the hypothesis that "would best co-ordinate the chaotic data of immediate experiences by means of a conceptual system as consistent as may be, while recognizing that first conceptions

must always be subject to revision with the progress of science". He himself looked upon this as his best work, and was surprised that it failed to arouse much interest. He was very conscious of the necessity for a recognition of the importance of psychology in the interpretation of the problems of life, and he did his best to make its contribution adequate.

In addition to these and other books he published numerous articles relating to muscular contraction, the physiological factors of the attentive process, various problems of visual sensation, the nature of the inhibitory impulse within the nervous system, the condition of fatigue in the nervous system, hypnotism, instinct, and intelligence.

For years he had been interested in abnormal manifestations of mental life, both because they might shed light on the normal, and also from a desire to help in some way, those suffering from the various aberrations from the normal.

Consequently he welcomed the work of Freud from the beginning and found a link with him in the insistence on the purposive character of symptoms. Some think that McDougall's *Social Psychology* played a considerable part in facilitating the acceptance of Freud's general principles in this country. He regretted at the time that Freud had not studied normal psychology, but he eventually came to the conclusion that Freud was thereby saved from having to struggle against many of its errors. In recent years he criticized severely what he considered to be the more extravagant developments of psycho-analysis, but there is no doubt that he appreciated Freud's contributions to psychology and psycho-therapy. In a different field he took a practical interest in the early correlational work of Spearman and Karl Pearson, and even though he personally refused to learn these newer methods, he expected his students to equip themselves to use them, and the earliest research work of William Brown, Cyril Burt, and of one of us necessitated the use of correlation. He was brilliant at devising experiments and designing the requisite apparatus. The dotting machine is a good illustration. It was intended to be a means of obtaining an objective

measure of voluntary attention, and was originally a home-made affair, structurally, by no means elegant. In its present form it has proved to be very useful in research on fatigue, drugs, nervous symptoms, not only in the laboratory but also in industrial research. His war service proved extremely interesting to him, both as a psychologist and a physician. His impressive personality was an incalculable asset in dealing with psycho-neurotic soldiers, and although in conversation he used to discuss the psychological problems involved rather than the effect of his treatment, some of his colleagues were not so reticent and related his many successes. The attitude of the medical profession to psychological disorders used to rouse him to fury when it resulted, as it so often did, in misunderstanding a patient.

In 1920 he accepted the Chair of Psychology at Harvard, as successor to William James, for whose work McDougall had the deepest sympathy, and for whom he had a great admiration. He frequently remarked that whenever he felt he had a really original idea, he could generally find it in James.

In 1920 he published the results of many years of work on groups or societies under the title of *The Group Mind*. He felt the need for such a study because of the current tendency to treat the human mind as an abstraction quite apart from its social setting. Most previous studies of the group had been concerned with groups of low organization, namely, the crowd, but he included also the highly organized group, the evolution of which he traced from the simple psychological crowd, on lines parallel to the evolution of volitional action out of the instinctive impulses.

Social Psychology is an example of a book appearing at the right moment, while *The Group Mind* probably came too soon. Discussions on national life and the influence of leaders would probably have aroused more interest if published fifteen years later.

His decision to leave England was a great disappointment to many, who felt that if he had remained he would have had the opportunity of building up in Oxford an important School of Psychology. The post-war students were keenly interested in

psychology, and the introduction of "Modern Greats" gave it a place in the official curriculum. McDougall's fertility of mind and experimental resource would have enabled him to inspire and supervise many research workers. America proved both a stimulus and a disappointment—the former because other lands and the unknown had always appealed to him, and he found there a freedom from tradition in striking contrast to the England of pre-war days, but his disappointment was great when he found many students of psychology given over to the cruder forms of Behaviourism, and suspicious of views that seemed to them old-fashioned. Accustomed, too, to the quietude of Oxford academic life, he found it difficult to adapt himself to conditions where students could ring him up at any time, to discuss their work and views. In England at that time the daily Press hardly used the word psychology, except perhaps once a year when the British Association meetings were reported; in America he found himself embroiled in a violent controversy, with an important section of the Press taking sides against him, because of a defence of inherited characteristics. Here, however, he had the opportunity to develop experimental work on much more ambitious lines than Oxford resources permitted, and he planned and carried out over a number of years his now well-known experiment, which gave support to the Lamarckian hypothesis.

In 1927 he went to Duke University in North Carolina, where he continued to write and research until his death. During these years increasing deafness made life very difficult for him. He spent most of his summers in England, at Wendover, where he had bought a seventeenth-century house.

Although he still felt drawn to England, there was so much that appealed to him in America that he declined the offer of Sir Walter Fletcher, who wanted him to come to the Medical Research Council, to be responsible for research on Medical Psychology. The Oxford period saw the production of his most original work, but in America he almost doubled his output of publications. Between 1921 and 1938 he published thirteen books and numerous articles. Two of the books, the *Outline of Psychology*,

and the *Outline of Abnormal Psychology*, are theoretical works of importance, but although written during the American period, they were based on material collected previously.

During his American years he devoted himself primarily to developing the applications of psychology to problems of national welfare, to ethics, to the conduct of life, to the influences leading to war, and to the responsibility of science. He published a textbook, *The Energies of Men*, in 1932, which he meant as an introduction to psychology for students who had not time for a complete course. In it he assumes that psychic activity is no less real than physical and no less causally efficacious, and that psychic activity is always a forward striving towards some end.

Such problems as the existence of the soul, or the dependence of the psychical on the physical he looked upon not as "preliminaries to Psychology", but as "far-distant rewards of the scientific research of generations still unborn".

Just before his death he published the *Riddle of Life*, 1938—the riddle he had sought to solve. In it he discussed the difficulties and complexities of the problems, and describes some of the views entertained by philosophers and men of science. He gives as his considered opinion that forty years of work devoted to biological studies had convinced him that "any biology which neglects or ignores or denies the efficacy of psychical activities is doomed to a relative sterility". He says that although always interested in physiology he had learnt to rely less and less upon it, but that if the word physiology should be retained in some future ideal state as the most comprehensive name for the science which directly studies the functioning of the human organism, then psychology would logically be a branch of it.

The subject-matter of the American work is practical in character largely because he saw in America problems of eugenics, social organization, and the impact of race on race, in much clearer detail than was possible in England.

In England he was the scientific researcher, in America the teacher driving home by emphatic reiteration truths he felt were being neglected. With advancing years he felt more and more

strongly the fatal consequences of our neglect of our mental life.

All men of science influence the thought of their own and succeeding generations partly by dint of personality partly by sheer intellectual achievement. McDougall had not that vivid personality which holds the enthusiasm of a large band of enthusiastic and even uncritical disciples and so, in the popular sense, he founded no school. But he greatly influenced many individuals, and both directly and indirectly his influence has been considerable. Some of his research work is now only of historical importance, but a future generation may marvel at the neglect of lines of advance he has suggested, while a good deal he did has become incorporated in the general body of knowledge. Psychology is the poorer by the death of one who from boyhood to old age never lost interest in the secrets of human nature.

MAJOR GREENWOOD
MAY SMITH

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